Leiomyosarcoma of the Vagina in a Pregnant Patient: Case Report

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Leiomiossarcoma de Vagina em Paciente Gestante: Relato de Caso

Leiomiosarcoma de Vagina en Paciente Embarazada: Informe de Caso

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ABSTRACT

Introduction: Primary malignant lesions of the vagina are atypical, and vaginal sarcomas are even more uncommon. Leiomyosarcomas represent less than 2% of gynecological malignancies, and only 10% of these occur outside the uterus. **Case report:** Pregnant woman, 39 years old, sought medical attention due to pain and vaginal bleeding. A pregnant uterus and a solid vaginal mass extending into adjacent fat were found. At the 35th week of gestation, a cesarean section was performed with excision of the tumor, which was subsequently submitted to anatomopathological analysis and diagnosed as vaginal leiomyosarcoma. **Conclusion:** In this case, tumor removal was the chosen approach, given the presentation of the case, experience of the physicians involved, and availability of the hospital resources where the patient was treated. In fact, there are no specific guidelines for this type of presentation of vaginal leiomyosarcoma, which implies individualization of each case, with different therapeutic approaches, respecting the patient's particularities.

Keywords: Leiomyosarcoma; Pregnancy; Vaginal Neoplasms; Uterine Hemorrhage.

RESUMO

Introdução: As lesões malignas primárias da vagina são atípicas, e sarcomas vaginais ainda mais incomuns. Leiomiossarcomas retratam menos de 2% das neoplasias malignas ginecológicas, e apenas 10% destes ocorrem fora do útero. **Relato do caso:** Mulher, 39 anos, gestante, procurou atendimento médico apresentando dor e sangramento vaginal. Foram constatados útero gravídico e massa sólida vaginal que se estendia para gordura adjacente. Na 35ª semana de gestação, foi realizada uma cesárea com exérese da tumoração que posteriormente foi submetida à análise anatomopatológica, sendo diagnosticada como leiomiossarcoma de vagina. **Conclusão:** A exérese da tumoração, neste caso, foi a abordagem escolhida levando em conta fatores como apresentação do caso, experiência dos médicos envolvidos e disponibilidade de recursos no hospital onde a paciente foi atendida. De fato, não há *guidelines* específicos para esse tipo de apresentação de leimiossarcoma vaginal, o que implica em individualização de cada caso, com condutas terapêuticas variadas, respeitando as particularidades de cada paciente.

Palavras-chave: Leiomiossarcoma; Gravidez; Neoplasias Vaginais; Hemorragia Uterina.

RESUMEN

Introducción: Las lesiones malignas primarias de la vagina son atípicas y los sarcomas vaginales son aún más infrecuentes. Los leiomiosarcomas representan menos del 2% de las neoplasias malignas ginecológicas y solo el 10% de ellas se produce fuera del útero. **Informe del caso:** Mujer de 39 años, embarazada, acudió al médico presentando dolor y sangrado vaginal. Se encontró un útero embarazado y una masa vaginal sólida que se extendía hacia la grasa adyacente. En la semana 35 de gestación se realizó cesárea con escisión del tumor, el cual posteriormente fue sometido a análisis anatomopatológico, siendo diagnosticado como leiomiosarcoma vaginal. **Conclusión:** La escisión del tumor, en este caso, fue el abordaje elegido teniendo en cuenta factores como la presentación del caso, la experiencia de los médicos involucrados y la disponibilidad de recursos en el hospital donde se trató a la paciente. De hecho, no existen pautas específicas para este tipo de presentación del leiomiosarcoma vaginal, lo que implica la individualización de cada caso, con abordajes terapéuticos variados, respetando las particularidades de cada paciente.

Palabras clave: Leiomiosarcoma; Embarazo; Neoplasias Vaginales; Hemorragia Uterina.

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INTRODUCTION

Primary malignant lesions of the vagina are atypical, and vaginal sarcomas are even more uncommon. Leiomyosarcomas correspond to less than 2% of gynecological malignant neoplasms, and only 10% of them occur outside the uterus[1-3]. There is divergence in the number of cases in African American women, who have twice the incidence when compared to Caucasian women[4]. These are the most common vaginal sarcomas in adults. They originate anywhere in the vagina but can also arise in smooth muscle cells in adjacent tissues.

The literature of these cases is based mainly on reports and case series[5,6]. Although there are no typical symptoms and characteristics described, the most frequent are vaginal bleeding (56%), pelvic masses (54%) and pelvic pain (22%), and sometimes difficult urination and dyspareunia. In physical examination, most patients present nodules surrounded by normal vaginal mucosa, such as vaginal mass, and in cases of advanced tumor, polyps with exophytic component or necrotic vaginal masses can be palpated. These tumors can invade the rectum or pelvic tissues adjacent to the vagina[3,7,8].

Vaginal leiomyosarcomas are hardly diagnosed early. The average age of diagnosis is around 50 years, reaching up to 86 years[3,7,9]. Since there is no clear preoperative diagnosis for vaginal leiomyosarcoma, it should be done based on immunohistochemical and anatomopathological results after exeresis. The gold standard for diagnosis is histology[10,11]. The distinctive histopathological characteristics of leiomyosarcomas are the presence of coagulative necrosis of tumor cells, cytological atypia, high mitotic rate and positive staining for muscle markers (actin, desmin, caldesmon)[12,13].

Due to the possibility of transformation and recurrence, these tumors should be removed entirely. Radical tumor exeresis is the primary treatment with better results. Surgeons should choose the appropriate surgical approach according to the location of the leiomyosarcoma. Few reports describe how to remove them surgically, most report only the pathology of these tumors[10,14]. The adjuvant role of radiotherapy is not clearly defined in vaginal sarcomas, and even less data is available regarding chemotherapy used as adjuvant therapy. Adjuvant radiotherapy seems to be indicated in patients with high-grade sarcomas, low-grade recurrent tumor and if the tumor extends beyond surgical margins[15].

Because there is no specific protocol for the therapeutic approach of vaginal leiomyosarcomas, the treatment, which has surgical resection as its cornerstone, is variable and will consider the characteristics of each case, the experience of the professionals involved and the clinical condition of the patient[16]. Differentiation of tumor degree is the most important factor for prognosis[17], but, nevertheless, leiomyosarcomas are characterized by aggressive behavior and reserved prognosis, even in early stages. In patients treated with chemotherapy or postoperative radiotherapy, the survival rate in the following five years is only 36%[7]. Even in early stages, it presents recurrence rates of 53 to 71%. Some series report five-year survival of 51% in stage I, 25% in stage II and 0% in stages III or IV[8].

These tumors may present recurrence and eventually evolve with the appearance of metastasis in distant organs. A study of autopsies showed that these metastases occurred without lymphatic disease, which justifies a hematogenic dissemination. Therefore, patients with this disease have an unfavorable prognosis and metastasis to the lung occurs frequently[17,18].

Vaginal leiomyosarcoma is a malignant tumor characterized by its aggressive course, varied presentation, high recurrence and not having an ideal treatment established. Information on this type of sarcoma is found in scarce case reports that lack consensus regarding treatment, therefore, it is up to the doctor to individualize it, with caution, for each patient[19].

The importance of this case report is to disseminate and alert the scientific community about this rare neoplasm, as well as discuss clinical findings, examinations and surgical treatment. A relevant topic to be discussed, since there are few surveys on this disease.

This study was based on analysis of medical records, which contained relevant information on clinical conditions. In parallel, a literature review was conducted in databases such as SciELO and PubMed to compare what was actually performed in the case with what the scientific literature recommends.

This article has been approved by the Research Ethics Committee, report number 5168096 (CAAE (submission for ethical review): 52890121.0.0000.5515), in compliance with Resolution No. 466/2012[20] of the National Health Council.

CASE REPORT

Woman, 39 years old, 31 weeks and 6 days pregnant, fourth pregnancy, with three previous cesarean section deliveries, sought medical care at a gynecology and obstetrics reference center at a private hospital in the interior of São Paulo, complaining of vaginal bleeding for 15 days. Bright red bleeding with passing blood clots. The condition began on the 29th week of pregnancy. Denies comorbidities, smoking and

alcoholism. The patient's father presented gallbladder cancer at 72 years old.

In the physical examination of the abdomen, a pregnant uterus was observed, with a uterine height of 29 cm, heart rate of 144 beats per minute, normal uterine tone and absent uterine dynamics. The specular examination presented voluminous and friable tumoral mass of approximately 10 cm, starting in the upper third of the right lateral vaginal wall and extending to the middle third of the vagina.

On the same day of consultation, an ultrasound was performed that showed a solid, lobulated formation with exophytic component, vascular flow on Doppler, with a measurement of 5.5 x 5.4 x 4.2 cm, volume of 67 cm^3. Two weeks after the first consultation, magnetic resonance imaging of the pelvis was performed, which visualized a solid, heterogeneous lesion, in the deep third of the right lateral vaginal wall, extending to the adjacent fat, measuring 8.2 x 8.1 x 4.6 cm and an estimated volume of 157 cm^3.

During the 35th week of gestational age, due to the increase in vaginal bleeding, cesarean delivery was performed, resulting in the birth of a newborn with an Apgar score of 9 and 10. Right after delivery, vaginal tumor resection was performed (Figure 1). The removed content was sent for anatomopathological and immunohistochemical analysis with the diagnosis of high-grade leiomyosarcoma and non-evaluable margins due to tumor fragmentation (Figure 2). Immunohistochemistry showed estrogen receptor +/3+ (15%); Ki-67 positive (90%); positive desmin; positive caldesmon; negative CD 10; negative cytokeratin of 40, 48, 50 and 50.6 kDa and negative myogenin.

After eight weeks of vaginal surgery and cesarean delivery, systemic staging was performed with chest tomography and magnetic resonance imaging of the abdomen and multiple non-calcified pulmonary nodules of up to 0.7 cm were visualized in the lower lobes of the right and left lung. In the abdomen and pelvis resonance, three lesions were identified in the right hepatic lobe, heterogeneous, with areas of liquefaction suggestive of metastatic involvement, with the largest measuring 7 cm in its largest diameter. An expansive lesion was also seen in the upper third of the right lateral vaginal wall measuring 3.8 x 3.5 cm suggestive of local disease progression.

After multidisciplinary oncological meeting, palliative chemotherapy was initiated with docetaxel and gemcitabine hydrochloride, performing two cycles without complications. The patient presented local progression of the disease noticeable at the specular

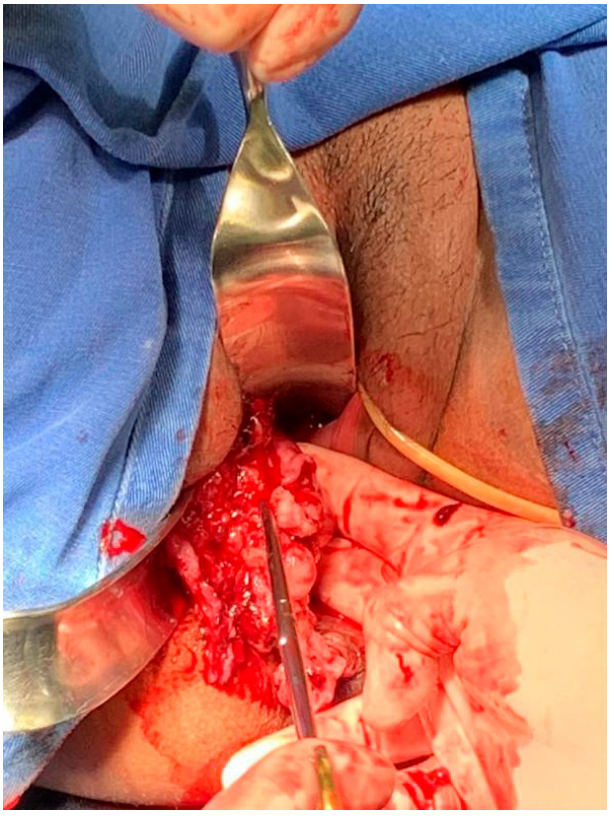

Figure 1. First tumoral resection

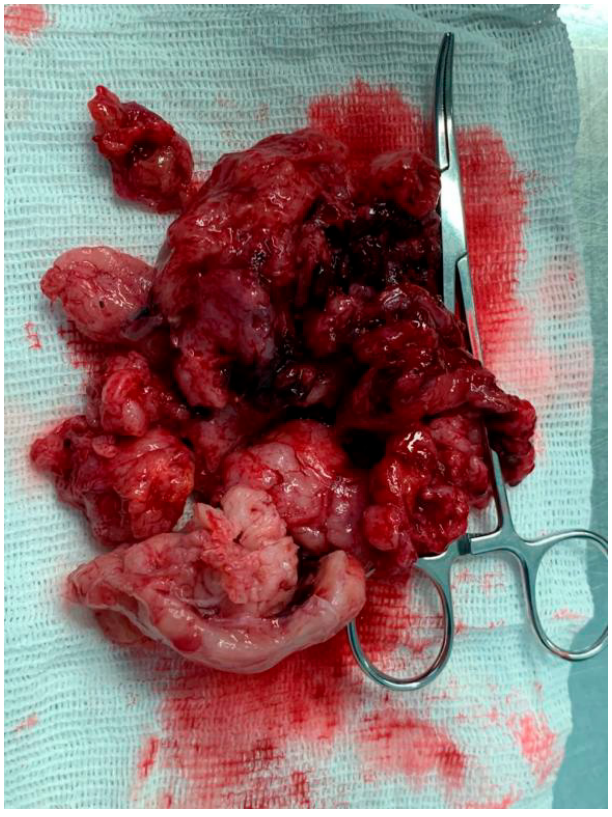

Figure 2. Macroscopy of tumoral mass

examination and new episodes of bleeding, thus being submitted to new surgical resection of all macroscopically visible tumoral mass again by vaginal route. This second surgical intervention happened four months after the first. One month after the second surgery, the patient underwent ten adjuvant radiotherapy sessions. The patient evolved with liver abscess and improved with clinical treatment after prolonged hospitalization of 45 days.

A new abdominal resonance showed an increase of the three hepatic nodules progression of metastatic liver disease, with the largest now measuring 16 cm. After a new multidisciplinary discussion, the patient started new palliative chemotherapy with doxorubicin + iphosphamide + dacarbazine + pazopanib. After three cycles of the new palliative chemotherapy regimen and 14 months after the first vaginal surgery, the patient presented progression of liver disease with alteration of liver enzymes and ascites. In a new clinical discussion, doctors chose to suspend chemotherapy and follow only with palliative care. Eighteen months after the diagnosis of vaginal leiomyosarcoma, the patient died due to the progression of metastatic disease and without vaginal bleeding.

The histological report showed malignant neoplasm, diagnosed as leiomyosarcoma.

DISCUSSION

The vagina is not a common place for the development of primary malignant tumors. Vaginal leiomyosarcoma, in particular, is an aggressive and very unusual tumor. Medical literature indicates that vaginal malignant sarcomas, in addition to a complicated prognosis, have high rates of local and distant recurrence[21].

The clinical relevance of the discussion on vaginal leiomyosarcoma is due to the shortage of described cases, which represent less than 2% of gynecological malignant neoplasms. It is difficult to diagnose and has no specific symptoms. These tumors are characterized by aggressive behavior, reserved prognosis and high rates of recurrence, reaching almost 80% in two years[22].

Although most reports address only the pathology of these tumors, it is of paramount importance that surgical removal is presented, since the severity of this tumor is high and the adjuvant role of radiotherapy and chemotherapy is not clearly defined, while radical tumor exeresis is considered a form of primary treatment[23].

In scientific articles on similar cases, there is a predominance of studies that reported the appearance of this neoplasm in adult women, with surgery as the main treatment, and radiotherapy and chemotherapy as a complement, although there is still no consensus on the ideal treatment[21,22].

According to the principles of auxiliary techniques of the 2024 National Comprehensive Cancer Network (NCCN)[24], which analyzes chromosomal aberrations and genes related to each type of neoplasm, leiomyosarcomas present aberrations with complex alterations, and the genes involved are still unknown. This shows the need for new studies, not only clinical but genetic, for better delineation of the pathology and improvement in the precision of early diagnosis.

Regardless of how early the diagnosis was in this case, the patient's disease was complex and aggressive in nature; imaging tests performed two months after delivery showed pulmonary and hepatic impairment due to possible metastases and, in most cases, available in the literature, pulmonary metastases were the most common[17,18].

Although the patient has received high complexity care, with access to adjuvant and neoadjuvant therapies, high-cost drugs and multidisciplinary support, the unfavorable outcome, with progression of the disease and subsequent death, is in line with the literature. Even with early diagnosis, the five-year survival rate for cases like this does not reach 40%, with recurrences in 71% of cases[7,8].

CONCLUSION

Vaginal leiomyosarcoma is a rare cancer, depicting less than 2% of malignant aggressive gynecological neoplasms with a high recurrence rate. There has been little scientific evidence published over the last ten years, and genes related to the development of this pathology remain unknown. Given the difficulties in establishing early diagnosis and the gaps in knowledge about this rare malignant neoplasm and high morbimortality, it is essential to improve therapeutic techniques and promote new research related to the subject.

CONTRIBUTIONS

Amanda de Queiroz Piffer, Ana Victoria Carvalho Domingues, Leticia Iamada Porto, Maria Amalia Barbosa Duarte de Oliveira and Giuliano Tavares Tosello have contributed to the study design, data acquisition, analysis and interpretation, wording, and critical review. They approved the final version for publication.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interest to declare.

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